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EXAMINER	
LOVEL, KIMBERLY M	

ART UNIT	PAPER NUMBER
2167	

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/706,124	OKUMURA, KAORU	
	Examiner	Art Unit	
	Kimberly Lovel	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,13,15,17 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,13,15,17 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *8/4/2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is responsive to the Amendment filed 4 August 2006.

2. Claims 1-10, 13, 15, 17 and 19 are pending in this application. Claims 1, 13, 15, 17 and 19 are independent. In the Amendment filed 4 August 2006, claims 1, 2, 4, 5, 9, 10, 13, 15, 17 and 19 have been amended and claims 11, 12, 14, 16 and 18 have been canceled. This action is made Non-Final due to new rejections under 35 U.S.C. 101.

3. The rejections of claims 13-16 and 19 as being anticipated by US PGPub 2004/0078366 to Crooks et al; claims 1-8 and 10-12 as being unpatentable over US Patent No 7,027987 to Franz et al in view of US Patent No 6,393,399 to Even; claim 9 as being unpatentable over US Patent No 7,027987 to Franz et al in view of US Patent No 6,393,399 to Even in view of the article "College Algebra Tutorial 57: Combinations" by WTAMU; and claims 17-18 as being unpatentable over US Patent No 7,027987 to Franz et al in view of US PGPub 2004/0205672 to Bates et al.

Drawings

4. The objections to the drawings are withdrawn as necessitated by the amendment.

Claim Rejections - 35 USC § 112

5. The rejection of claim 11 under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement is withdrawn as necessitated by the amendment.

Claim Rejections - 35 USC § 101

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. The rejections of claims 12, 14, 16 and 18 under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter are withdrawn as necessitated by the amendment.

8. Claims 1-10, 13, 15, 17 and 19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106 IV.B.2.(b)

A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application.

Claims 1, 13, 15, 17 and 19 recite a method for making additional terms available to a searching process. In the claim, there is no physical transformation being claimed, a practical application would be established by a useful, concrete and tangible result. For it to be a tangible result, it must be more than a thought or a computation and must have a real world value rather than being an abstract idea. The invention as recited in the claim just merely inputs a string and at least one additional term to the

search process. The method fails to produce an end result that is either stored or displayed. Therefore it is unclear as to what kind of tangible output is obtained by these limitations. An example of a tangible result would be displaying or storing the query or search results. **Claims 2-10**, which are dependent on claim 1 fail to overcome the rejection and therefore are rejected on the same grounds as claim 1.

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,027,987 to Franz et al (hereafter Franz et al) in view of US Patent No. 6,393,399 to Even (hereafter Even) in view of US PGPub 2003/0088547 to Hammond (hereafter Hammond).

Referring to claim 1, Franz et al disclose a method for receiving a voice search query and enhancing the query to provide additional terms to a search engine. In

particular, Franz et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving an input string [voice query] that incorporates a plurality of characters separated by at least one space (see column 5, lines 52-53 and column 6, lines 28-29 – a voice query is considered to represent *a string that incorporates a plurality of characters*; in the example voice query "White House," the characters in the word "White" and the characters in the word "House" are *separated by at least one space*);

concatenating the plurality of characters to form at least one additional term (see column 8, lines 51-66 – Franz et al disclose providing the search query additional terms in the form of compound words); and

providing said at least one additional term to the search process (see column 6, lines 62-66 and column 7, lines 58-61 – the hypothesis list is considered to represent the *additional terms*; the hypothesis list is utilized to construct the search query).

However, while Franz et al disclose the concept of using compound words to expand the search query, Franz et al fail to explicitly teach the limitation of concatenating the plurality of characters to form at least one additional term. Even provides a method for analyzing a text string and using a compounder process to provide compound words (see abstract, column 1, lines 55-59 and Fig 2). In particular, Even discloses concatenating the plurality of characters to form at least one additional term (see column 4, lines 18-26 – in the example, the characters are "Wahl," "Kampf" and "Geschichten;" concatenating the characters forms the additional term "WahlfKampfGeschichten").

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Even's compounder process as a subcomponent to Franz et al's method for providing additional terms to a searching process. One would have been motivated to do so since Franz et al's method provides the capability of using compound words to perform or refine a search (Franz et al: see column 8, lines 51-53) and also since using compound words instead of each word separately increases the chances of providing better search results (Franz et al: see column 8, lines 53-57).

The combination of Franz et al and Even (hereafter Franz/Even) fail to explicitly disclose the further limitation of providing the input string and the at least one additional term to the search process. Hammond discloses a term variation resolver, which expands a query (see [0053], lines 1-5), including the further limitation of providing the input string [cholera] and the at least one additional term [vibrio cholerae] to the search process (see [0053], lines 14-18 – the term variation resolver 50 expands the query to contain both terms).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the feature of Hammond for including an original term and a variation of the original term in a query as an additional step after Franz/Even provides additional search terms. One would have been motivated to do so in order to provide comprehensive search results.

Referring to claim 2, the combination of Franz/Even and Hammond (hereafter Franz/Even/Hammond) discloses the method of claim 1, wherein,

receiving a string comprises receiving a string that incorporates a first set of characters separated by a space from a second set of characters (Even: see column 4, lines 18-26 – in the example, the characters are "Wahl," "Kampf" and "Geschichten"); and

concatenating comprises concatenating the first and second sets of characters (Even: see column 4, lines 18-26 – concatenating the characters forms the additional term "WahlfKampfGeschichten").

Referring to claim 3, Franz/Even/Hammond discloses the method of claim 2, wherein the first and second sets of characters are each a single character (Even: see column 4, lines 18-26 – the compounder process concatenates the words no matter how many characters exist in a word).

Referring to claim 4, Franz/Even/Hammond discloses the method of claim 1, and further comprising preprocessing [removing noise words] the input string (Franz et al: see column 7, lines 6-9).

Referring to claim 5, Franz/Even discloses the method of claim 4, wherein preprocessing includes removing at least one extraneous character [removing noise words] from the input string (see Franz et al: see column 7, lines 6-9).

Referring to claim 6, Franz/Even discloses the method of claim 1, and further comprising suppressing at least one additional term (Franz et al: see column 6, lines 53-56 - according to page 14, lines 13-17 of the applicant's specification, "suppression may be applied in regard to the level or number of words or characters that can be concatenated;" the query restraint parameters the number of hypotheses to be

considered and the total number of words to be included in a query are considered to represent suppressing the *at least one additional term*).

Referring to claim 7, Franz/Even discloses the method of claim 1, wherein the method is executed upon a client system [client device] (Franz et al: see column 4, lines 50-52 and Fig 1, item 110).

Referring to claim 8, Franz/Even discloses the method of claim 1, wherein the method is executed upon a server [server 130] (Franz et al: see column 4, lines 48-50).

Referring to claim 10, Franz/Even discloses the method of claim 1, wherein the input string is a search string [voice query] (Franz et al: see column 5, lines 47-48 and 52-53).

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,027,987 to Franz et al in view of US Patent No. 6,393,399 to Even in view of US PGPub 2003/0088547 to Hammond as applied to claim 1 above, and further in view of the article "College Algebra Tutorial 57: Combinations" by WTAMU (hereafter WTAMU).

Referring to claim 9, Franz/Even/Hammond discloses a method for providing at least one additional search term to the search process including limiting the total number of words to be included in a query (Franz et al: see column 6, lines 55-56). However, Franz/Even fails to explicitly teach the further limitation wherein the string includes N words, and wherein (N-1) (N/2) additional search terms are provided to the search process based upon word adjacency. WTAMU discloses a formula that provides

the same results as the formula wherein the string includes N words, and wherein (N-1) (N/2) additional search terms are provided to the search process based on word adjacency (see page 2, line 4 – the formula for combinations). If the variable r is set to 2, then the formula for combinations provides the same result as the formula (N-1)(N/2). For example, if N=6, then the formula for combinations yields (6!/((6-2)!*2!)) = (6!/(4!2!)) = 15 and the formula (N-1)(N/2) yields (6-1)(6/2) = (5)(3) = 15. Also, if N=7, then the formula for combinations yields (7!/((7-2)!*2!)) = (7!/(5!2!)) = 21 and the formula (N-1)(N/2) yields (7-1)(7/2) = (6)(3.5) = 21.

It would have been obvious to one of ordinary skill in the art to set the variable r equal to 2 in the formula for combinations in order to create a subset in the same manner as using an equation such as (N-1)(N/2) to create a subset. One would have been motivated to do so in order to reduce long processing times that result from over-generating variants of a term.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use WTAMU's formula for combinations with the variable r equal to 2 to generate a subset as a method of calculating the parameter, the total number of words to be included in a query, disclosed by Franz/Even/Hammond. One would have been motivated to do so to create a voice interface that achieves high accuracy without having to require constant user input (Franz et al: see column 1, lines 27-44).

12. Claims 13, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPub 2004/0078366 to Crooks et al (hereafter Crooks et al) in view of US PGPub 2003/0088547 to Hammond (hereafter Hammond).

Referring to claim 13, Crooks et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving an input string ["Z-pac"] that incorporates a plurality of characters separated by at least one hyphen (see [0022], lines 12-13 and [0024], lines 48-49 – the system receives an input string from a user);

removing the at least one hyphen to form at least one additional term (see [0024], lines 48-50 – the term "Zpac" is formed after eliminating the hyphen from the term "Z-pac"); and

providing said at least one additional term to the searching process (see [0025], lines 3-5 – the normalizer performs the step of removing the hyphen which results in providing an additional term for the search process).

Crooks et al fail to explicitly disclose the further limitation of providing the input string and the at least one additional term to the search process. Hammond discloses a term variation resolver, which expands a query (see [0053], lines 1-5), including the further limitation of providing the input string [cholera] and the at least one additional term [vibrio cholerae] to the search process (see [0053], lines 14-18 – the term variation resolver 50 expands the query to contain both terms).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the feature of Hammond for including an original term and a

variation of the original term in a query as an additional step after Crooks et al provides additional search terms. One would have been motivated to do so in order to provide comprehensive search results.

Referring to claim 15, Crooks et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving an input string [vibra-tabs] that incorporates a plurality of characters separated by at least one hyphen (see [0022], lines 12-13 and [0024], lines 50-54 – the system receives an input string from a user);

replacing the hyphen with a space to form at least one additional term (see [0024], lines 50-54 – the term "vibra tabs" is formed after the hyphen is removed from the term "vibra-tabs"); and

providing said at least one additional term to the search engine (see [0025], lines 3-5 – the normalizer performs the step of removing the hyphen which results in providing an additional term for the search process).

Crooks et al fail to explicitly disclose the further limitation of providing the input string and the at least one additional term to the search process. Hammond discloses a term variation resolver, which expands a query (see [0053], lines 1-5), including the further limitation of providing the input string [cholera] and the at least one additional term [vibrio cholerae] to the search process (see [0053], lines 14-18 – the term variation resolver 50 expands the query to contain both terms).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the feature of Hammond for including an original term and a

variation of the original term in a query as an additional step after Crooks et al provides additional search terms. One would have been motivated to do so in order to provide comprehensive search results.

Referring to claim 19, Crooks et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving an input string that incorporates a plurality of terms separated by a space or a hyphen [vibra-tabs] (see [0022], lines 12-13 and [0024], lines 50-54 – the system receives an input string from a user);

generating at least one additional term by performing an operation selected from the group consisting of removing a space between the plurality of terms, removing a hyphen between the plurality of terms, replacing a space between the plurality of terms with a hyphen, and replacing a hyphen between the plurality of terms with a space (see [0024], lines 50-54 – *removing a hyphen between a plurality of terms* is considered to represent the selected operation; the term "vibra tabs" is formed after the hyphen is removed from the term "vibra-tabs"); and

providing said at least one additional term to the searching process (see [0025], lines 3-5 – the normalizer performs the step of removing the hyphen which results in providing an additional term for the search process).

Crooks et al fail to explicitly disclose the further limitation of providing the input string and the at least one additional term to the search process. Hammond discloses a term variation resolver, which expands a query (see [0053], lines 1-5), including the further limitation of providing the input string [cholera] and the at least one additional

term [vibrio cholerae] to the search process (see [0053], lines 14-18 – the term variation resolver 50 expands the query to contain both terms).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the feature of Hammond for including an original term and a variation of the original term in a query as an additional step after Crooks et al provides additional search terms. One would have been motivated to do so in order to provide comprehensive search results.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,027,987 to Franz et al in view of US PGPub 2004/0205672 to Bates et al (hereafter Bates et al).

Referring to claim 17, Franz et al disclose a method for receiving a search query and then enhancing the query to provide additional terms to the search engine. In particular, Franz et al disclose a method for making additional terms available to a searching process (see abstract), the method comprising:

receiving a string that incorporates a plurality of characters separated by at least one space (see column 5, lines 52-53 and column 6, lines 28-29 – a voice query is considered to represent *a string that incorporates a plurality of characters*; in the example voice query "White House," the characters in the word "White" and the characters in the word "House" are *separated by at least one space*);

form at least one additional term (see column 8, lines 51-61 – Franz et al disclose providing additional terms in the form of compound words); and

providing said at least one additional term to the search engine (see column 6, lines 62-66 and column 7, lines 58-61 – the hypothesis list is considered to represent the *additional terms*; the hypothesis list is utilized to construct the search query).

However, while Franz et al disclose the concept of using compound words to expand the search query, Franz et al fail to explicitly teach the limitation of replacing said at least one space with a hyphen to form at least one additional term. Bates et al discloses a method for determining variants of words (see abstract). In particular, Bates et al discloses the limitation of replacing said at least one space with a hyphen to form at least one additional term (see [0030], lines 8-9; [0095]; and Fig 9, item 220 – a variant of E mail is E-mail).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize Bates et al's method of determining variants of compound words as a subcomponent to Franz et al's method for providing additional terms to a searching process. One would have been motivated to do so since Franz et al's method provides the capability of using compound words to perform or refine a search (Franz et al: see column 8, lines 51-53) and also since using compound words instead of each word separately increases the chances of providing better search results (Franz et al: see column 8, lines 53-57).

The combination of Franz et al and Bates et al (hereafter Franz/Bates) fails to explicitly disclose the further limitation of providing the input string and the at least one additional term to the search process. Hammond discloses a term variation resolver, which expands a query (see [0053], lines 1-5), including the further limitation of

providing the input string [cholera] and the at least one additional term [vibrio cholerae] to the search process (see [0053], lines 14-18 – the term variation resolver 50 expands the query to contain both terms).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the feature of Hammond for including an original term and a variation of the original term in a query as an additional step after Franz/Bates provides additional search terms. One would have been motivated to do so in order to provide comprehensive search results.

Response to Arguments

14. Applicant's arguments filed 4 August 2006 in regards to **claims 3 and 9** have been fully considered but they are not persuasive.

In regards to **claim 3**, Applicant argues the following on pages 9-10: Claim 3 specifically limits the first and second sets of characters to being a single character and that because there is no teaching or suggestion in the cited reference, a claim element is missing from the cited references and a prima facie case of obviousness has not been established.

The examiner respectfully disagrees. As mentioned above, the prior art teaches concatenating characters. The prior art concatenates words regardless of how many characters each word consists of. The prior art therefore has the capability of handling the case in which each word only has one character as claimed by the present invention.

In regards to **claim 9**, Applicant argues the following on page 10: The prior art fails to teach wherein the terms are provided to the search process based upon word adjacency.

The examiner respectfully disagrees. When determining different combinations, the equation factors in word adjacency.

15. All other arguments with respect to **claims 1-10, 13, 15, 17 and 19** have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly Lovel whose telephone number is (571) 272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kimberly Lovel
Examiner
Art Unit 2167

11 October 2006
kml

JOHN COTTINGHAM
SUPERVISORY PATENT EXAMINER
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12 October 2006